DIVISION OF ENVIRONMENT
QUALITY MANAGEMENT PLAN

PART III:

ASBESTOS CONTROL PROGRAM
QUALITY ASSURANCE PROGRAM PLAN

Kansas Department of Health and Environment
Division of Environment
Bureau of Air and Radiation
Air and Asbestos Compliance Section
Forbes Field, Building 283
Topeka, Kansas 66620

Approvals

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Section 1

OVERVIEW

1.1 Purpose and Scope

This document presents the quality assurance (QA) Program Plan (QAPP) for the Asbestos Control Program, Air and Asbestos Compliance Section, Bureau of Air and Radiation, Kansas Department of Health and Environment (KDHE). The purpose of the plan is to define and document the QA and quality control (QC) activities of the Asbestos Control Program, and ensure the validity of all data produced in the course of operations. Standard Operating Procedures (SOPs) and equipment associated with the operation of the program are described in the appendices of the plan. The provisions of this plan apply to inspections and sampling conducted within the scope of the program.

1.2 Operational Overview

The program collects asbestos samples to determine the presence of asbestos-containing materials. Once collected, the samples are sent to an accredited laboratory, contracted with the department, where trained laboratory personnel analyze the sample. The contracted laboratory must be accredited through the National Voluntary Laboratory Accreditation Program (NVLAP) for Asbestos Bulk Identification. Participation in this program is mandatory for samples collected for possible litigation or for asbestos consultation.

1.3 Developmental History

K.S.A. 65-5301 *et seq.* establishes a statewide program to license business entities and authorize public agencies who engage in the removal or encapsulation of friable asbestos-containing materials. The statutes also provide authority to certify those employees who engage in activities to remove or encapsulate friable asbestos-containing materials. Operating under this authority, the section receives pre-project notifications that provide specific information about abatement projects. The regulations contain prescribed work practices, including waste disposal requirements that must be followed when removing or encapsulating friable asbestos-containing materials. The section performs on-site inspections to determine compliance with applicable regulations.

K.S.A. 12-5401 establishes a program where municipalities may request the Department to provide technical assistance in performing asbestos exposure assessments and in selecting appropriate asbestos abatement actions. The section performs consultation inspections of buildings and structures owned by municipalities or governmental agencies to determine the presence and condition of asbestos materials.

The section conducts on-site compliance inspections of either pre-notified asbestos abatement projects or non-reported renovation or demolition projects that may involve the disturbance of

asbestos materials. The section also performs complaint type investigations which may involving taking of samples of suspect building materials.

Samples are collected during these types of activities to document the presence of regulated asbestos materials and for possible initiation of enforcement action if violations are observed at the time of the inspection by Department staff.

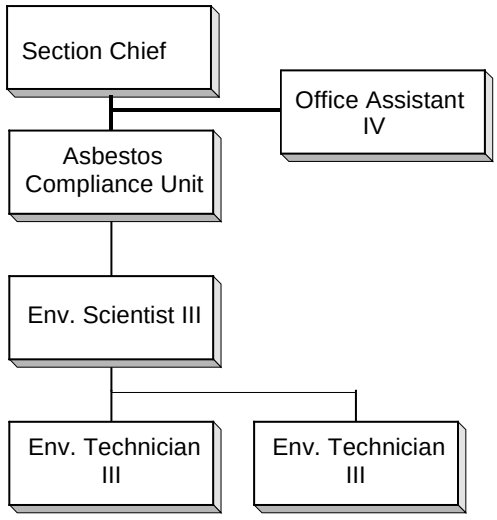
Consultation inspections conducted at the request of municipalities or governmental agencies are performed for identification and quantitation of asbestos content.

Section 2

ORGANIZATIONAL DESCRIPTION

2.1 Organizational Chart

Inspections and sampling are performed for the Asbestos Control Program by section staff, more specifically staff within the Asbestos Compliance Unit. The organizational chart for the unit is shown below.



2.2 Responsibilities

The Environmental Scientist V (section chief position) is responsible for administering the program and assuring that QA/QC is implemented as written.

The Environmental Scientist III position is essentially responsible for the day-to-day activities of the program and general supervision of program staff. Additionally, this position occasionally performs compliance inspections to verify that field staff comply with this plan and other section policies, and also provides assistance to staff on varying abatement methodologies. Further, this position is responsible for performing asbestos consultations in governmental buildings.

Two Environmental Technician III positions are assigned to the program. One position is responsible for the review of asbestos project notifications that licensed contractors and public

agencies must submit prior to conducting abatement work in the state. This review consists of evaluating the reported work practices and then preparing a written response. The other position performs field compliance inspections to verify the reported work practices and to assure that the contractor or agency is complying with the work practice procedure regulations.

An Office Assistant IV is assigned to the section and is responsible for review and issuance of asbestos worker certifications. The position also provides general clerical support for the program.

2.3 Distribution

This document, the Asbestos Control Program (ACP) QAPP, and any revisions will be distributed to:

Environmental Scientist III
KDHE BAR AACS Section Chief
KDHE Bureau of Air and Radiation (BAR) QA Representative

Section 3

DATA PERFORMANCE CRITERIA

This section provides a description of data performance criteria expressed in terms of data precision, accuracy, completeness, comparability and representativeness for each parameter of interest.

3.1 Precision

Precision is defined as the level of agreement among individual measurements of the same property, conducted under identical or similar conditions. Precision is not assessed in the Asbestos Control Program (ACP).

3.2 Accuracy

Accuracy is defined as the extent to which a measured value actually represents the condition being measured. Accuracy is influenced by the degree of random error (precision) and systematic error (bias) inherent in the measurement operation (e.g., environmental sampling and analytical operations). Accuracy is not assessed in the Asbestos Control Program (ACP).

3.3 Completeness

Completeness is defined as a measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under normal conditions. Completeness is related to a thorough evaluation of those building material components which may contain asbestos and collecting the required number of samples of those suspect materials. Under 40 CFR Part 763.86, EPA establishes specific criteria for collecting the proper number of samples for each homogenous surface area. Staff performing consultations will follow this criteria when collecting samples.

3.4 Comparability

Comparability is defined as a measure of the confidence with which one item (e.g., data set) can be compared to another. Comparability is not assessed.

3.5 Representativeness

Representativeness is defined as a measure of the degree to which data accurately and precisely represent a selected characteristic of a monitored system. Representativeness is not assessed.

Section 4

NETWORK DESCRIPTION

4.1 Purpose

The purpose of this section to provide a description of, and rationale for, intended sampling frequency, sampling network design and monitoring site selection criteria.

4.2 Site Selection Criteria

The mission of the Asbestos Control Program is to prevent public exposure to hazardous airborne asbestos fibers during renovation and demolition activities. The statutes and regulations provide the program necessary authorities to protect the public's health and welfare.

Licensure of business entities and KDHE approval of public agencies is a means to assure that qualified contractors and public agencies are removing or encapsulating asbestos-containing materials in the state. Certification of all workers and supervisors who are employed by licensed contractors or approved public agencies provides a trained and qualified work force familiar with the applicable regulations and capable of wearing personal protective equipment.

With the public at greater risk if asbestos fibers are not properly removed or contained during renovation or demolition activities, the Asbestos Control Program inspection criteria will focus on buildings or structures where the public is at risk of exposure to hazardous airborne asbestos fibers.

Section 5

DESCRIPTION OF SAMPLING EQUIPMENT

5.1 Description of Sampling Equipment

A description of the sampling equipment is described in Appendices A, B, C, and D.

Section 6

DESCRIPTION OF FIELD PROCEDURES

6.1 Description of Field Procedures

A description of field procedures, including sample collection, analysis, preservation, transport and chain-of-custody procedures and accompanying safety protocols are in Appendices A, B, C, and D.

Section 7

LABORATORY PARAMETERS AND PROTOCOLS

7.1 Laboratory Parameters and Protocols

The Asbestos Control Program is responsible for contracting with a NVLAP accredited laboratory for the purpose of asbestos bulk identification. The contracted laboratory is responsible for maintaining accreditation through the NVLAP, including establishing an QA/QC plan, which is reviewed by NVLAP personnel during on site audits of the laboratory. These on site audits are performed every two years as part of the accreditation requirements.

Section 8

DATA VALIDATION AND MANAGEMENT

This section provides a description of data validation, storage, transfer, reporting and backup requirements and any special documentation requirements.

8.1 Reduction and Validation of Data

Sample results are reported by the NVLAP accredited laboratory in terms of type of asbestos and the total percentage of asbestos content in the sample. Occupational Safety and Health Administration (OSHA) and EPA regulations make reference to this procedure.

8.2 Reporting of Data

A written report for each sample analyzed is provided to the Air and Asbestos Compliance Section by the contracted accredited laboratory. The report identifies the sample results by type of asbestos and total percentage of asbestos content. The reports are filed at the KDHE offices.

Section 9

EQUIPMENT CALIBRATION AND AUDITING

This section describes equipment testing, auditing, calibration, and preventive maintenance procedures.

9.1 Calibration

Laboratory equipment and instrumentation must be calibrated and preventative maintenance established. The procedures for this category are the responsibility of the contracted NVLAP accredited laboratory. The procedures are subject to review by the department. Calibration is addressed by contracted NVLAP accredited laboratory. The procedures are subject to review by the department.

9.2 Preventive and Remedial Maintenance

Maintenance is addressed by contracted NVLAP accredited laboratory. The procedures are subject to review by the department.

Section 10

PURCHASED EQUIPMENT

10.1 Purchased Equipment

This section provides a description of inspection procedures and acceptance requirements for purchased equipment and supplies.

The following checks are made when new equipment has been received: Check to make sure all the parts in the packing list are actually there. Check for broken parts. Check that all parts fit together during assembly. If there is a motor, check to see that it turns on when power is supplied.

Section 11

EVALUATION PROCEDURES

This section contains a description of procedures (including statistical procedures) used to evaluate data precision, accuracy, completeness, representativeness and comparability, including a detailed characterization of internal QC procedures and external performance audit requirements.

11.1 Evaluation And Verification of Data

The evaluation and verification of sampling results will be performed as specified in the QA management plan for the laboratory. The Air and Asbestos Compliance Section will not be responsible for this category.

11.1.1 Quality Control

Responsibility of the contracted NVLAP accredited laboratory.

11.1.2 Data Quality Assessment

Responsibility of contracted NVLAP accredited laboratory.

Section 12

SPECIAL TREATMENT OF DATA

12.1 Special Treatment of Data

This section describes procedures used to evaluate and enhance utility of environmental monitoring data including, but not necessarily limited to, procedures and assumptions applied in the identification and treatment of (a) outliers and other anomalous data, (b) nonlinear data requiring statistical transformation, and (c) values reported as “less than” or “greater than” established reporting limits**.**

There is no special treatment of data.

Section 13

CORRECTIVE ACTIONS

13.1 Corrective Actions

Samples collected by the Asbestos Control Program are forwarded to the contracted NVLAP accredited laboratory for analysis. Staff collects samples of building materials and components to determine the presence and amount of asbestos in each respective sample. If asbestos is present and the percentage exceeds the regulatory level, the sample is considered to be asbestos-containing. If no asbestos is present or the percentage is below the regulatory level, the sample is considered to be non-asbestos containing. Based on these criteria, no further action is warranted.

13.1.1 Equipment Malfunction

Any deficiency in equipment performance discovered in the course of routine operation must be noted in writing. Within the manufacturer's guidelines, the defective equipment may be serviced by Asbestos Control personnel or returned to the manufacturer for repair or replacement. If available, back-up equipment shall be utilized during the interim to minimize interruption of operations.

13.1.2 Staff Performance Problems

In the event that Asbestos Control staff exhibit(s) difficulty with a given procedure, additional training shall be provided. Modification of procedure(s) to facilitate execution may be beneficial.

Section 14

QUALITY OF ACQUIRED DATA

14.1 Quality of Acquired Data

This section describes procedures for determining the quality of ancillary data acquired from external sources not subject to the provisions of the KDHE Division of Environment Quality Management Plan (e.g., meteorological, hydrological, geological, chemical and/or biological data obtained from other state and federal agencies).

There is no acquired data from external sources.

Section 15

REPORTS

15.1 Reports

This section contains a description of program/project deliverables (electronic databases, summary statistics, illustrative materials, interim and final reports, etc.) and schedule for completion.

15.1.1 An end-of-year program evaluation shall be conducted by the section chief, and a written report submitted to the bureau director and division director by February 15 of the following year. The program evaluation report must indicate when, how, and by whom the evaluation was conducted, the specific aspects of the program subjected to review, a summary of significant findings, and technical recommendations for necessary corrective actions. Section chiefs shall discuss the reported findings with the appropriate program managers and all participating field, laboratory, and data management staff.

15.1.2 To ensure that the QA management program remains current and consistent with its stated objectives, all portions of the plan must be subjected to review and revision on a regular basis. At approximately yearly intervals, the plan and its appended SOPs shall be reviewed by the section chief and appropriate manager(s), necessary revisions formulated, and concurrences obtained from the bureau director and the division director. Revisions to this plan may also be implemented at any time, based upon urgency of need or staff workload considerations. Concurrences must be obtained as for annual revisions.

Section 16

TRAINING

16.1 Training

New employees (including recent transfers from other programs) receive a thorough indoctrination into the QA/QC policies and procedures of the Asbestos Control Program. Part I of the Division of Environment Quality Management Plan (QMP), the Bureau of Air and Radiation QA management plan, and this document and its associated SOPs, are required reading on the part of all new employees. All employees participating in environmental monitoring activities shall review these documents annually in accordance with Part I, Section 5.6 of the QMP. All new employees shall participate in the orientational seminars offered by the KDHE Personnel Office. New supervisors are also expected to complete the introductory course for supervisors offered by the Department of Administration.

All personnel involved in any function related to data quality must have sufficient training in their appointed jobs to contribute to the reporting of data of high quality. Such personnel include sample collectors, equipment/instrument operators, auditors, data processors, and QA oversight staff.

Conditions of employment require that the new employee must be certified as Kansas Class II Asbestos Supervisor by the completion of probationary period. Class II certification requires attendance at an asbestos contractor/supervisor training course approved by the U.S. Environmental Protection Agency (EPA) or from a state asbestos program that has been delegated the authority to approve training courses for EPA. To maintain this certification, the employee is required to attend an annual refresher course. The training will be arranged and paid for by the KDHE.

Provisions of the EPA Worker Protection Rule require the examination by a medical physician to determine that the employee is capable of wearing respiratory equipment during asbestos inspections. The employees will receive an annual medical examination and the medical exam will be arranged and paid for by the KDHE.

The employee(s) who conduct(s) asbestos consultations must be accredited to perform these activities. To be accredited, the employee must attend an EPA approved asbestos inspector/management planner training course and pass the required final written examination. Attendance at a one-day annual refresher training course is required to maintain the accreditation.

New field staff receive extensive formal on-the-job training concerning the identification of asbestos-containing materials, potential health hazards associated with exposure to them, and the procedures that must be followed in order to keep personal and public exposure to airborne asbestos fibers at a minimum.

The Bureau of Air and Radiation maintains a library of educational materials and a satellite

television receiver system which may be utilized for training and/or continuing educational purposes. Workshops, symposia, or continuing educational courses offered by colleges, vocational educational institutions, or various governmental agencies may be attended by appropriate staff. In order for an employee to participate, the subject matter must be applicable to a program or project, funding must be available, and supervisory and administrative approval must be secured in advance.

Appendix A

SOP, SAMPLE COLLECTION

I. Overview

This appendix describes the procedures used by personnel to collect samples during compliance inspections of asbestos abatement projects.

Bulk sampling is the one definitive means of identifying the presence of asbestos-containing materials. Proper bulk sampling procedures insure the safety of the individual taking the sample and building occupants.

Samples are collected during compliance inspections of abatement projects. Employees that are assigned activities that will require them to enter areas where airborne asbestos concentrations are anticipated to equal or exceed 0.1 fibers per cubic centimeter of air, as an eight hour time weighted average, shall be provided appropriate respiratory protection. Employees entering a regulated area must don appropriate protective clothing and respiratory equipment, at all times. This equipment will be provided to the employee, and the employee is required to perform required maintenance on the respirator.

II. Technical Qualifications

Conditions of employment require that the new employee must be certified as Kansas Class II Asbestos Supervisor by the completion of probationary period. Class II certification requires attendance at an asbestos contractor/supervisor training course approved by the U.S. Environmental Protection Agency (EPA) or from a state asbestos program that has been delegated the authority to approve training courses for EPA. To maintain this certification, the employee is required to attend an annual refresher course. The training will be arranged and paid for by the KDHE.

III. Calibration And Troubleshooting

No calibration is required. In case of problems which can not be solved, the field person will contact their supervisor.

IV. Collection of Data Including Operating Procedures

A. Contact contractor's on-site representative (Kansas Class II asbestos supervisor worker) to discuss status of project. If available, the building owner's representative should also be contacted and advised that the Department employee is on site.

B. The employee must follow the Health and Safety Requirements (see ACSOP-4) when

working in an environment that requires protective equipment.

C. Sampling procedures must minimize the amount of the employee's personal exposure to airborne asbestos fibers. When applicable, the procedure must minimize the amount of disturbance of the asbestos material.

D. Using a knife or other sharp object, place sample in a clean container. Complete pre-printed sampling label which identifies sample location, date, and name of employee. Place label on exterior of container in manner that seals container.

E. Wet wipe exterior of container of all visible asbestos contamination.

F. Dispose of all asbestos-contaminated materials properly in the required waste disposal containers.

G. The employee shall insure that the sample container is clean and has not been contaminated from previous usage.

V. Quality Control Sampling

None is required.

VI. Preparation And Analyzing Samples in The Field

None is required.

VII. Transport, Transferring, And Storing Samples

See Appendix B.

VIII. Data Acquisition And Processing

All reports and documentation will be filed at a location designated by the Section Chief.

IX. Glossary of Technical Terms

See the definitions in K.S.A. 65-5301, K.A.R. 28-50-1, and Appendix A of the KDHE DOE Quality Management Plan (Part I).

X. Checklist of Field Equipment

A. Sample containers; the Kansas Health and Environmental Laboratory will provide clean glass containers of sufficient size. For large samples, clean zip-lock plastic bags shall be used.

B. Ladder of sufficient height. A folding 12 feet ladder is assigned to each mini-van used by the program.

C. Respirator with adequate quantities of HEPA filter cartridges.

D. Flashlight.

E. Knife with retractable blade.

F. Permanent ink markers.

G. Duct tape or masking tape.

H. Disposable protective clothing and foot covers.

I. Hammer, screwdriver, or pliers.

J. Amended water

K. Camera or video camcorder to document the sample and location for enforcement purposes.

L. Labels

Appendix B

SOP, SAMPLE TRANSPORT

I. Overview

This appendix describes the procedures used by personnel to transport samples taken during compliance inspections of asbestos abatement projects.

Samples that are collected in the field, and those samples submitted by others must be transported in a manner that prevents asbestos fiber exposure to individuals who may come in contact with the container that holds the sample.

II. Technical Qualifications

Conditions of employment require that the new employee must be certified as Kansas Class II Asbestos Supervisor by the completion of probationary period. Class II certification requires attendance at an asbestos contractor/supervisor training course approved by the U.S. Environmental Protection Agency (EPA) or from a state asbestos program that has been delegated the authority to approve training courses for EPA. To maintain this certification, the employee is required to attend an annual refresher course. The training will be arranged and paid for by the KDHE.

III. Calibration And Troubleshooting

No calibration is required. In case of problems which can not be solved, the field person will contact their supervisor.

IV. Collection of Data Including Operating Procedures

See Appendix A.

V. Quality Control Sampling

None is required.

VI. Preparation And Analyzing Samples in The Field

None is required.

VII. Transport, Transferring, And Storing Samples

A. Samples or sample containers must be placed in larger sealable plastic bags prior to transporting the sample.

B. Chain-of-custody forms must be completed as appropriate (see Appendix C) and shall be attached to the exterior of the plastic bag. Proper documentation must appear on the exterior of the sealable plastic bag. This information includes sample reference number and information identifying the sample and location.

C. If mailed the samples must be packaged and shipped in a manner that assures that the sample containers will not release asbestos fibers during transportation. If hand delivered, the sample must remain in the possession of the employee or individual until accepted by appropriate Asbestos Control Program staff.

D. The laboratory will only analyze those samples that the Asbestos Control Program has properly authorized and submitted in accordance with the procedures listed within this section.

VIII. Data Acquisition And Processing

All reports and documentation will be filed at a location designated by the Section Chief.

IX. Glossary of Technical Terms

See the definitions in K.S.A. 65-5301, K.A.R. 28-50-1, and Appendix A of the KDHE DOE Quality Management Plan (Part I).

X. Checklist of Field Equipment

A. Sample containers

B. Plastic zip-lock bags

C. Mailers

Appendix C

SOP, CHAIN-OF-CUSTODY

I. Overview

This appendix describes chain-of-custody procedures used by personnel during compliance inspections of asbestos abatement projects.

Chain-of-custody procedures are important to insure the validity of all samples collected for purposes of litigation and accuracy of information. This process is accomplished by providing continuous documentation each time a sample changes hands from the time it is collected until final disposition. This continuous documentation reduces the possibility of tampering or cross-contamination by allowing you to know the whereabouts of the sample at all times.

II. Technical Qualifications

Conditions of employment require that the new employee must be certified as Kansas Class II Asbestos Supervisor by the completion of probationary period. Class II certification requires attendance at an asbestos contractor/supervisor training course approved by the U.S. Environmental Protection Agency (EPA) or from a state asbestos program that has been delegated the authority to approve training courses for EPA. To maintain this certification, the employee is required to attend an annual refresher course. The training will be arranged and paid for by the KDHE.

III. Calibration And Troubleshooting

No calibration is required. In case of problems which can not be solved, the field person will contact their supervisor.

IV. Collection of Data Including Operating Procedures

See Appendix A.

V. Quality Control Sampling

None is required.

VI. Preparation And Analyzing Samples in The Field

None is required.

VII. Transport, Transferring, And Storing Samples

A. Obtain a chain-of-custody record form (see Appendix E) which requires the location, date, sample number, explanation of activity, name of individual who collected sample and signatures.

B. Once bulk samples are collected and placed in individual containers, they should be placed in a larger container such as a larger sealable plastic bag. The sampler should insure that the containers are individually sealed prior to placing them in the larger container. This should be done for safety and security reasons.

C. The larger container should be sealed before leaving the facility.

D. The person releasing the bulk samples to the contracted NVLAP accredited laboratory for analysis must sign off to document that he/she has submitted them for analysis. An individual at the contracted NVLAP accredited laboratory must sign off that he/she has received the samples.

E. After the samples have been analyzed, the contracted NVLAP accredited laboratory will forward a written report to the Asbestos Control Program. The samples will be returned to the Asbestos Control Program in their original containers. The chain-of-custody form will be signed by an employee of the contracted laboratory, releasing the samples back to the Asbestos Control Program. Sample containers will be hand delivered, or mailed in appropriate safe and sturdy mailing containers. A staff member of the Asbestos Control Program will accept, sign and date the chain-of-custody form returned with the analyzed samples.

F. Staff receiving the analyzed samples back from the contracted laboratory will place the samples in lockable cabinet located in BAR's work area for storage until such time as the sample is properly disposed of. Staff will sign and date the chain-of-custody sheet for each sample and give the sample to the section supervisor who is responsible for storing the samples. The samples will be placed in a lockable storage cabinet with the key in the possession of appropriate supervisory personnel.

G. Employee sign-offs must be obtained each time the samples change hands. This will provide the continuous documentation necessary to track the samples until final disposition.

VIII. Data Acquisition And Processing

All reports and documentation will be filed at a location designated by the Section Chief.

IX. Glossary of Technical Terms

See the definitions in K.S.A. 65-5301, K.A.R. 28-50-1, and Appendix A of the KDHE DOE Quality Management Plan (Part I).

X. Checklist of Field Equipment

A. Chain-of-custody form

B. Pen

Appendix D

HEALTH AND SAFETY REQUIREMENTS

I. Overview

This appendix describes health and safety requirements for personnel during compliance inspections of asbestos abatement projects. These requirements must be met in order to ensure protection of individuals from respiratory exposure to asbestos fibers.

II. Technical Qualifications

Employees shall not be assigned to activities that will require them to enter areas where airborne asbestos concentrations can be anticipated to exceed 0.1 fibers per cubic centimeter of air, calculated as an eight-hour time weighted average, unless the employee has first completed the training required for Class II certification in the State, including annual refresher training as applicable. Such training shall be provided at no cost to the employee.

III. Calibration And Troubleshooting

No calibration is required. In case of problems which can not be solved, the field person will contact their supervisor.

IV. Collection of Data Including Operating Procedures

A. Employee Medical Examinations

Employees shall not be assigned to activities that will require them to enter areas where airborne asbestos concentrations are anticipated to exceed 0.1 fibers per cubic centimeter of air, calculated as an eight-hour time weighted average, unless the employee has, within the last 12 months, been given a medical examination and declared capable of working with a respirator by a licensed physician. Medical examinations shall be provided at no cost to the employee and shall comply with the requirements of 40 CFR 763.121(m). Medical records resulting from such examinations shall be placed in special employee medical files at a location designated by the Section Chief and shall be maintained for the duration of the employee's assignment to the Asbestos Control Program plus 30 years.

B. Employee Protective Clothing

Employees shall be provided protective clothing whenever assigned to activities that will require them to enter areas where airborne asbestos concentrations are anticipated to equal or exceed 0.1 fibers per cubic centimeter of air, as an eight-hour

time weighted average, or areas where any other persons occupying the area are required to wear protective clothing. For the purpose of this requirement, protective clothing shall be deemed to consist of disposable coveralls or similar whole-body clothing, head coverings, gloves, and foot covering. Staff shall also be provided hard hats for use in areas where head injuries may occur. Employees shall be held personally responsible for assuring that contaminated protective clothing is removed before entering any indoor area that is intended to remain free from contamination, and that the removed clothing is placed in sealed bags and disposed of in accordance with the requirements of K.A.R. 28-50-14. Rips and tears that occur in protective clothing while it is being worn shall be immediately repaired or the clothing shall be replaced.

C. Employee Respirator Protection

Employees that are assigned activities that will require them to enter areas where airborne asbestos concentrations are anticipated to equal or exceed 0.1 fibers per cubic centimeter of air, as an eight-hour time weighted average, shall be provided negative pressure and/or powered air purifying respirators. Employees provided negative pressure respirators shall be fit tested in the manner described in 40 CFR 763.121(h)(4). Records of such tests shall be maintained in the employee's certification file.

Employees assigned respirators shall be held personally responsible for maintenance, repair and storage of the respirators in accordance with the current recommendation of the National Institute for Occupational Safety and Health (NIOSH), and the manufacturer's instructions. A minimum of five sets of P-100 (HEPA) filters shall be provided, and kept on hand, with each assigned respirator.

Employees shall be personally responsible for selecting and properly donning whichever assigned respirator they deem appropriate to keep their personal exposure to airborne asbestos contamination below 0.1 fibers per cubic centimeter of air, as an eight-hour time weighted average. For the purpose of such determinations, half and full face negative pressure respirators shall be considered to provide a protection factor of 10 against airborne asbestos fibers, and powered air purifying respirators shall be considered to provide a protection factor of 100. These considerations not withstanding, employees shall not wear respirators providing a protection factor less than those that are required to be worn by other persons who are working in an area that is being inspected. In addition, where airline respirators are being worn in an inspected area, the employee shall request that the contractor provide an equivalent, properly sanitized respirator for the employee's use while an inspection is being made. If the contractor is unable, or unwilling, to provide an airline respirator, the employee may enter the contaminated area with a powered air purifying respirator, if it is considered to provide adequate protection to keep the employee's personal exposure to airborne asbestos fibers below 0.1 fibers per cubic centimeter of air, as

an eight-hour time weighted average, and the work area is otherwise free of harmful air contaminants.

Supervisory personnel shall be responsible for periodically reviewing subordinates' compliance with these respirator use requirements, and shall correct any noted problem relating to such compliance.

D. Personnel Monitoring

Personal exposure of employees to airborne asbestos contamination resulting from inspections conducted while asbestos abatement activities are in progress shall be determined from personal air monitoring results provided by the responsible contractor or public agency. Employees shall request that monitoring results obtained during the time of inspections be mailed to the Asbestos Control Section as soon as it is available to the contractor or public agency. After personally reviewing the results, the employee shall indicate on the monitoring report the approximate amount of time that was spent in the monitored area and then date and sign the sheet. The monitoring results shall be filed in a separate asbestos exposure file maintained for employees. Employees who engage in consultation visits or emergency clean up operations that are expected to result in significant airborne asbestos exposures, due to the duration of the operation and the nature of the areas involved, shall be issued, and use, a personnel monitoring pump during the activity. The monitoring sample shall be collected and analyzed in accordance with the Appendices A and B of 40 CFR 763.121, and results of the analysis shall be reviewed, and signed, by the employee before being filed in the employee's exposure file.

V. Quality Control Sampling

None is required.

VI. Preparation And Analyzing Samples in The Field

None is required.

VII. Transport, Transferring, And Storing Samples

See Appendix B and C.

VIII. Data Acquisition And Processing

All reports and documentation will be filed at a location designated by the Section Chief.

IX. Glossary of Technical Terms

See the definitions in K.S.A. 65-5301, K.A.R. 28-50-1, and Appendix A of the KDHE DOE Quality Management Plan (Part I).

X. Checklist of Field Equipment

A. Respirator/protective

B. Air purifying respirator

C. Respirator battery pack

D. Respirator/negative pressure

E. HEPA cartridges

F. Protective clothing/disposable/Tyvek

G. Coveralls/flame and static retardant/Nomex

H. Latex gloves

I. Glasses/protective

J. Hard hat

K. Boots/steel-toed

L. First Aid/Safety kit

M. HEPA filter vacuum

Appendix E

CHAIN-OF-CUSTODY FORM

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
LABORATORY SERVICES AND RESEARCH
ASBESTOS IDENTIFICATION IN BULK MATERIALS WORK SHEET

Report To:_____

Address: Air and Asbestos Compliance Section

Collection Site:_____

Type of Operation:

_____ Public School _____ Public Building _____ State Building

_____ Other _____

Collected By:_____ Date Collected __/__/__
mm dd yy

Submitted By:_____

Sample Type:

_____ Insulation _____ Pipe Insulation _____ Sprayed-on-Ceiling
_____ Ceiling Tile _____ Other_____

Sample Description:_____

_____

ET-__95__-_____ Lab Number_____

Comments:_____

_____

CHAIN OF CUSTODY

DATE	RECEIVED FROM	RECEIVED BY
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